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Cover

This month's cover photographs are by Mark Tapia. The photos depict the creation of a computer program by the UTCS Programming Services Group (top photo) and its area of application (bottom photo). This month's COMPUTERNEWS features the UTCS Programming Services Group whose work is described in the articles entitled *Programming Services, Physical Plant Project* and *Royal Conservatory of Music Project.*

Contents

Programming Services 3
Physical Plant Project 4
Royal Conservatory of Music Project 5
Product Line Groups 5
ACM SIGUCC Conference 7
Christmas Hours of Service 9
DECsystem-10 News 10
DECUS Comes to Toronto 11
CSS News 12
The WYLBUR Public Library 12
SPSS Update 13
Personnel Changes 14
New Titles in DCS Library 14
Systems
Directory

The next issue of COMPUTERNEWS will be a bimonthly issue dated January-February 1980 and will be distributed to subscribers the first week of February 1980.

The Management and Staff of the University of Toronto would like to take this opportunity to wish our users a **Merry Christmas** and a **Happy and Successful New Year.**

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PROGRAMMING SERVICES

In recent years, the combination of financial restraint and the potential of computer systems for productivity increase and associated cost saving has given added momentum to the computerization process at the University of Toronto. UTCS's Programming Services Group was formed to meet the needs of users for computer systems' design, development and maintenance. When your internal programming staff are fully committed or non-existent, the use of UTCS Programming Services represents an alternative to the *do nothing* option. Programming Services staff comprise a highly-trained and highly-motivated group well capable of undertaking a variety of computing projects, both large and small.

Many years of experience have been gained in the following areas:

- feasibility studies
- systems analysis
- systems design
- PL/I, MARK IV, APL, FORTRAN
- SAS, SPSS,

and new areas are continually explored, the latest being those of mini-based systems, and online systems.

In order to deliver effective, efficient systems, Programming Services continually studies and evaluates new technologies. Recently, Programming Services became the first remote user of TSO/SPF on the UTCS 3033. SPF stands for Structured Programming Facility and is an example of improved programming technology which facilitates the writing of readable and hence maintainable code. In addition, the full screen editing capabilities of TSO/SPF have greatly improved productivity.

A number of projects in diverse application areas have been completed and delivered including:

- an Alumni Record System - a major file maintenance and reporting system for the Alumni Affairs Department
- a number of similar systems supporting medical research teams, for example spinal injuries, strokes, etc.
- a file maintenance and comprehensive indexing system for medieval land and property transfer documents
- a Course Schedule Reporting System for the School of Continuing Studies
- a book ordering system for the Scarborough and Erindale Libraries

Two major projects in development for the University of Toronto Physical Plant Department and the Royal Conservatory of Music are described in the COMPUTERNEWS articles below.

Contact your Computing Services Representative or call the Programming Services Supervisor at 978-6877 and find out how Programming Services can help you meet your computing needs.

Bill Lauriston

PHYSICAL PLANT PROJECT

The Physical Plant Department of the University of Toronto provides services related to building and plant operations, maintenance and improvement. This work involves, in part:

- maintaining a staff of skilled trades people
- maintaining an inventory of over 3000 stock items
- external purchasing of materials and services
- working on over 10,000 job orders each year

In development is a new computer system which will facilitate the administration of this effort, a project which is the largest undertaken to date by UTCS Programming Services. Scheduled to be implemented this spring, this project will have taken approximately 9 man-years to complete, including the time of Physical Plant personnel. Much effort was put into analysis and design, on the theory that weighting at the 'front end' pays dividends later on, and this has proven to be true.

The new system is expected to yield the following benefits:

- daily reporting of accounts, highlighting exceptional status (e.g. overdrawn, finalized)
- improved cost reporting
- easier account reconciliation with the Comptroller's office
- better inventory control with many 'on-demand' reports available daily
- improved time accounting
- improved job-order scheduling with the availability of more comprehensive, up-to-date information
- elimination of keypunching by replacement with intelligent screen terminals (Physical Plant will begin testing on-site 'remote' CADE terminals in January)

The programming language used is PL/I with TSO/SPF as the main development tool. SPF stands for Structured Programming Facility and, indeed, we have adhered to the standards of structured programming throughout the project. This structured programming approach has already benefited us by facilitating changes to programs already written. Further benefits will accrue to Physical Plant in the future if the system requires maintenance or enhancement.

Most University departments will see the product of our labours when they begin receiving their new, detailed customer statements next spring.

The Physical Plant project is a challenging and rewarding one for Programming Services. The experience gained has added to our competence in:

- financial systems development
- large project management
- structured programming
- distributed data entry

and we anticipate utilizing that expertise to benefit other users.

Paul Roth

ROYAL CONSERVATORY OF MUSIC PROJECT

For the past two years, the UTCS Programming Services Group has been involved in a project for the Royal Conservatory of Music. The purpose of the project is to create a computer -based system to support the administration of the music examination sessions given twice each year by the Conservatory. Until now, preparation of the lists and timetables for nearly 60,000 students sitting examinations in 300 centres across Canada has been done manually by the staff of the Conservatory's examination department. In implementing the computerized system, the Conservatory expects to eliminate much of the routine, repetitive work involved, enabling the staff to concentrate on problem-solving and exception-handling. The Conservatory also expects to reduce the cost of administering the exams and to benefit from comprehensive examination statistics.

For Programming Services, the project has been interesting on several accounts - foremost of these being the work to develop a 'distributed' data entry facility using an intelligent terminal. The terminal functions as an independent micro-computer during data entry operations and as an ASCII terminal for communication with the UTCS 3033. Screen displays were developed for the terminal, using a forms language which allows 'fill-in-the-blanks' data entry and immediate validation and correction.

The first examinations to be administered using the new system will be held in December 1979 and final implementation is scheduled for the spring of 1980.

This system has utilized and extended the competence of Programming Services in the development of record management systems and this increased expertise will make our services more valuable to other users with similar or related requirements.

Sally Holton

PRODUCT LINE GROUPS

In order to make most effective use of UTCS staff, and to provide flexibility in allocating staff resources to projects according to changing user needs and priorities, UTCS is organized horizontally by function rather than vertically by service or system.

This functional organization means that, in general, the Operations Group is responsible for operating all UTCS systems, the Systems and Communications and Small Systems Groups are responsible for providing operating systems' support, the Services Support Group is responsible for services support for applications software, and the Academic and Administrative Services Groups are responsible for the end-user support of all our services, usually by geographic area.

Although the functional organization leads to increased staff efficiency and flexibility within each level, it is not always the most effective organization in providing end-user services. This organizational weakness is particularly apparent considering that within the computing field an increasing emphasis is being placed on the end-user and his needs. In particular, there is a growing awareness of the need to provide specialized services which will meet the specific requirements of the end-user.

It is becoming increasingly important for UTCS to recognize this need, particularly as the disciplines which normally are not

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PRODUCT LINE GROUPS continued

thought of as being scientifically oriented become aware of the many non-scientific computer applications which are available. For some time now, there have been groups of users which have been identified by the particular type of application being used; users of numerical packages and users of statistical packages are examples of such groups. More recently, a new group of users has emerged which is looking at computing as a tool with which document preparation needs can be met. In order to attract users interested in new computer applications as well as users interested in traditional computer applications, it is necessary for UTCS to provide services which can be used by those with a minimum of computing experience.

In an effort to provide specialized services which will meet the end-user's needs, UTCS has added Product Line Groups to its organizational structure. While divisions such as Academic Services, Administrative Services, Support Services, Systems, Communications and Small Systems, and Operations exist, representatives of these divisions interact with each other via the Product Line Group. The Product Line Group organizes and directs all UTCS activities related to a particular product. We have created thirteen different Product Line Groups for:

Statistical Applications
Numerical, Scientific and Engineering Applications
Language Processors
Text-processing Services
Data-processing Services
Graphics Services
Student Services
APL Services
TSO and WYLBUR Services
DEC-10 Services
Utilities and Systems Services
Small Systems Services
Programming and Consulting Services

The intent is to organize our support and development of products by Product Line Group, with staff members from each of the UTCS divisions participating in the support and development of a product line wherever possible or necessary. For example, the Statistical Applications Product Line Group currently has responsibility for twenty-one statistical packages run under the UTCS 3033 General Purpose and High Speed Job Streams and TSO Service, the DEC-1090 Time-sharing Service and the 3031 Administrative System. This Group is also responsible for co-ordinating UTCS programs with the Statistical Consulting Services offered by the Department of Statistics at the University of Toronto.

The initial task of the Product Line Groups (PLG) will be to:

- Take an inventory of existing products in the PLG;
- Assess the status of each product in the PLG with respect to known problems, current level of usage, documentation and level of support for the product;
- Prioritize and recommend short-term (6-month) action to be taken with respect to products within the PLG, including recommendations to improve, change the level of support, or delete a product;
- Recommend options for future development and direction of the PLG.

The Product Line Groups were established in September and it will take some time for them to become fully effective. Internal to UTCS, the Product Line Group arrangement will improve inter-group communications, and will result in overall improved product support. Although our users will continue to interface directly with their Computing Services Representative, they should see improved overall support for the computing tasks which they undertake.

Rein Mikkor

ACM SIGUCC CONFERENCE

The seventh annual conference of the ACM Special Interest Group on University Computer Centres was held in Los Angeles from September 30th through October 3rd. Hosting the 1979 gathering was the University of California, Berkeley, with Jerome Smith as Chairman. Papers delivered and resulting discussions focused primarily on the rapidly changing role of Users Services amid the trend towards customized computing offered by mini and micro systems.

Following Jerry Smith's opening remarks in the Keynote Session, Mark Cummings of the University of California at San Francisco addressed the question, "Should The Computer be in the University or Should the University be in the Computer?". Traditionally, the "Computer in the University" means batch, local time-sharing and remote and local support functions. What is envisioned as the future role of the university is that of remote education through the development of computer technology. Through the use of such systems as satelite networks, television and radio programs with digital broadcasting, voice synthesis, simulation proctors and hybrid video data, students can participate in any number of courses offered in the university without leaving home. Special courses which do not attract the enrollment minimum required for class instruction may be taken using CAI (Computer Assisted Instruction) programs on tapes, cassettes and floppy disks plugged into personal computers.

The reduction in government spending, declining enrollments, decline in the respect for credentials, licensed non-accredited schools and private industry providers are all factors supporting this new definition of the role of the University. Resistance to this new direction centers around factors such as the instructors' view of the medium of teaching, the non-teaching role of a university e.g. socialization, and staff job security.

To meet these new demands in education, the strategy for the next decade must include promotion of computer literacy, strengthening of micro capability, curriculum planning to allow for courses to be taught in group and non-group situations and the development of community education and communications centres as a solution to the socialization problem.

Current changing directions in computing services are beginning to necessitate "New Directions in Funding" as pointed out by Barbara Morgan from the University of California, Berkeley during another session dealing with computer funding. The traditional method of generating revenue has been by processing charges on the central site hardware. However, with the unbundling of software from hardware, software and maintenance costs are becoming an equally important consideration in user charging. The "Cash Center Concept" introduced at this session involves allocating costs and associating cost with service. In allocating costs, all elements must be considered. The most common of these are software packages, documentation, salaries, terminals and supplies, marketing and professional development costs. Some expense elements may be recovered through direct charging such as software surcharges and documentation sales. Or services may be charged for on a percentage of cash basis. These methods do, however, require that universities go to a hard or real dollar scheme of charging.

Another session dealt with the problem of communication in a network environment. After monitoring the effectiveness of its remote interactive services, the Fort Collins Computer Center concluded that a lack of effective dialogue with the user community causes users to become viewed as unknown entities. In this situation, users cannot be relied upon to help each other; people ser-

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ACM SIGUCC CONFERENCE continued

vices such as training and advising are hard to provide effectively, and written materials are difficult to distribute to a targeted audience. In order to address those problems, FCCC's information program applies the Weiner concept which defines a communications loop: control, action and feedback. To provide effective service, the emphasis must be on *feedback* and not on *control* where it has traditionally been. Feedback requires a constant monitoring of "who's doing what" by the gathering of usage statistics, maintenance of user profiles, and dialogue through available media such as hotlines, forums, electronic mail, broadcast messages and teleconferencing. The feedback is then analysed for common denominators which are used to establish a standard set of subject areas. This becomes input for the control element, education and documentation. Because travel is often not feasible for remote users, the teaching of courses at the central site has given way to a series of seminars covering the principles of accessing services including how to reference appropriate materials and use online tools. The action element of the loop consists of the user receiving and using services effectively.

Other sessions examined the new role of User Services in providing support for mini and micro computers on campus. The primary objective should be to keep ahead of user needs so that users are not forced to go out and try to fill their own needs. Engineering and Physical Science Departments in many of the larger universities have been filling their computing needs in the areas of experimental design and research with their own small digital computers. Other departments are also attracted to the idea of purchasing their own mini and standalone systems. By purchasing a small system, a department can obtain customized service for a relatively small initial outlay of funds.

A user trying to fill his own needs however, is faced with a number of potential problems such as:

- vendor selection for maximum value
- provision for preventative maintenance
- environmental considerations e.g. temperature, humidity and power
- technical expertise for software maintenance.
- operator training
- need for the more comprehensive facilities provided by large mainframes.

By improving its ability to anticipate customer needs and developing its expertise accordingly, it is felt that User Services should play a support role to:

- provide guidance to users in defining computer requirements
- provide information and advice on the suitability of various vendor products
- assist departments in the writing of computer funding proposals and the application for computer funds
- work with users in the analysis, design, implementation and testing of a system
- assist in the continuing operation of the system which includes training, consulting and hardware/software maintenance

Ideally, small systems should be recommended on the basis of their ability to provide a good standalone service as well as their compatability with large mainframes in order to obtain generalized services as needed.

Other papers delivered at the conference covered such applications and services as word processing, data entry, graphics, documentation and consulting. A copy of the Conference Proceedings is available for reference in the Information Office, Room 206, Engineering Annex.

Marg Doherty

UNIVERSITY OF TORONTO COMPUTING SERVICES
CHRISTMAS & NEW YEAR HOLIDAY SCHEDULE

	21	22	23	24	25	26	27	28	29	30	31	1	2
	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed
165 Facilities	N	N	SS*	UO	UO	UO	SS*	SS*	SS*	SS*	SS*	UO	N
3033 Facilities	N	N	SS	X	X	X	SS	SS	SS	SS	SS	X	N
DEC 1090 Facilities	N	N	SS*	UO	UO	UO	SS*	SS*	SS*	SS*	SS*	UO	N
CSS Facilities	N	X	X	X	X	X	X	X	X	X	X	X	N

Access to EUT, EAT, CSS, Keypunch and terminal facilities in the Engineering Annex will be available at hours when the 3033 is scheduled for operation. Users of other terminal sites should watch for signs or check with their CSR.

The UTCS *offices* will adhere to the holiday hours which are in effect for the University of Toronto i.e. the offices will be closed from 5 PM Friday, December 21 to 9 AM Wednesday, January 2.

KEY

3033 - GPJS, HSJS, TSO, WYLBUR
165 - APL, ATS
CSS - Communication & Small Systems
DEC 1090 - Time-sharing

X Closed

UO Unattended Operation

SS Single Shift
9am - 5 pm

N Normal Hours of Service

Communication & Small Systems facilities will be open to Keyholders as usual.

* 165 and DEC 1090 will be running unattended after 5pm. Service may be interrupted for brief periods to perform system backups etc.

DECSYSTEM-10 NEWS

Performance Analysis

The DEC-10 Systems Group recently began collecting data for the purpose of analyzing the performance of UTCS' DECsystem-1090. It will be several months before this data will be processed in detail on a regular basis; however, several preliminary results have been obtained which we think will be interesting to our users.

The principle findings of the Group related to the DECsystem's response time. The following facts were discovered. During non-prime hours, the response time typically averages less than 0.2 seconds. System response time is considerably slower between the hours of 10:00 and 12:00 in the morning. Response time is slowest between the hours of 2:00 P.M. and 5:00 P.M., the reason being that the majority of DEC users choose to do their computing during these hours. Often during the prime hours, the response time is greater than one second, even when averaged over an entire hour.

In quantitative terms **response time** is defined as the elapsed time between typing a monitor command or input to a program and having the desired action begin to happen. For example, if the user wants to run a program by the name of FOO, he will type the command "RUN FOO". As soon as he types the carriage return, the monitor interprets the command, searches the disk for the user's file FOO.EXE, allocates main memory for the user (swapping other jobs out, if necessary), loads the program into memory and starts it running. Response time then, is the time which elapses between the carriage return and the beginning of program execution.

The preliminary analysis of our data indicates that the major component in the system's response time is the large amount of swapping which often must occur before the action initiated by the user can actually begin. It seems to be the case that too small a percentage of jobs are in main memory when they become runable.

The obvious remedy for a problem of this type is to increase the amount of main memory on the system. It is also necessary, however, to demonstrate that the frequency of poor response and the overall utilization of the system are great enough to justify such an expensive solution. UTCS will continue to monitor the situation to determine what action might be appropriate.

In the meantime, everyone would benefit if at least some users took advantage of the much better system response available outside peak hours. In addition, any user willing to work during non-prime time (i.e., before 8:00 AM or after 7:00 PM) will gain the advantage of paying only 60% of the prime time session charges.

Fall DECUS in San Diego

The 1979 Fall meeting of the Digital Equipment Corporation Users Society (DECUS) will be held at the Town and Country Hotel in San Diego on December 10-13, 1979. For the first time the meeting will combine both the mini/midi community and the users of DEC's large mainframes, the DECsystem-10 and the DECsystem-20.

The preliminary schedule shows that as many as thirteen sessions will be in progress simultaneously. Between three and six of these will be particularly interesting to users of the DEC-10. Some of the sessions will be concerned with announcements by DEC of new hardware and software products, while others will discuss the new features in the most recent version of old products.

What may be of greatest interest to DEC-10

continued...

DECSYSTEM-10 NEWS continued

customers is the present status of the new 7-series monitor which has been in field test for the last six months. Also scheduled are a series of specialized sessions on various utilities, editors and language processors. Some sessions, such as those concerned with networks and communication products, will interest users of both large and small systems, especially the PDP-11 line of products.

Since UTCS is sending several of its personnel to the San Diego meeting, a report of the conference will appear in the next issue of COMPUTERNEWS. Interested readers may wish to review a copy of the July issue of this publication which contained an article reporting on the 1979 Spring DECUS meeting held in Atlanta last June.

Datapak Replaces Telenet

The Telenet line to UTCS's DECsystem-10 will be taken over by Bell Canada's Datapac in early January. At this time UTCS does not know either the exact date of the changeover or the new access procedures. We understand, however, that there will be no significant interruption of service to either our Canadian or U.S. customers. Active users of the system will be kept informed of developments by means of the online login message.

Ed West

DECUS COMES TO TORONTO

The 13th Annual Symposium of the Digital Equipment Corporation Users Society of Canada (DECUS Canada), will be held in Toronto on February 26-29, 1980 at the Harbour Castle Hilton hotel.

All persons interested in the use of DEC computers are invited to attend. For registration materials, please write to DECUS Canada, P.O. Box 11500, Ottawa, Ontario K2H 8K8. A preliminary program has been drawn up and should be available with the registration materials.

Users may be interested to note that several UTCS staff members are involved in the behind the scenes work of planning and organizing the Symposium. Dr. Edmund West is acting as the LCG (Large Computer Group) Co-ordinator, and will be chairing some LCG sessions. LCG looks after the DECsystem-10 and DECsystem-20 computer series. Krishna Patnaik is the Graphics Co-ordinator, and will also be organizing graphics demonstrations and tours of the UTCS Communications and Small Systems lab. Ian Darwin is acting as RT-11 Co-ordinator and chairing panel discussions on RT-11 and Text Processing. RT-11 is the DEC PDP-11 operating system used on the CSS Lab systems.

Why not mark these dates on your calendar now? We hope to see many of you at the DECUS Symposium in Toronto in February, 1980!

Ian F. Darwin

CSS NEWS

The Communications and Small Systems (CSS) lab has arranged to have one of Digital Equipment's new MINC-11 (Modular INstrument Computers) on location for two weeks beginning January 14, 1980. It will be available for inspection and testing by current and prospective UTCS users during that period. It is hoped that several faculty and staff members will avail themsleves of the opportunity to examine the MINC-11's A/D, D/A, digital-in/digital-out and graphics capabilities.

Phil Girouard

THE WYLBUR PUBLIC LIBRARY

The WYLBUR Public Library is a collection of facilities commonly needed by WYLBUR users, but not conveniently provided by basic WYLBUR commands. It consists of a set of WYLBUR EXECFILEs -- files consisting of WYLBUR commands which perform the required function automatically for the user when the Execfiles are invoked. Since WYLBUR Execfiles are simply sequences of WYLBUR commands, they provide no facilities which the WYLBUR user could not perform himself by entering the appropriate commands. The advantage of using Execfiles is that the user need not enter the individual commands manually.

Public Execfiles reside in a WYLBUR Library called "$WYL.LIB" -- to execute Public Execfile REG, for example, one points WYLBUR at member REG in "$WYL.LIB" by typing:

```
exec from $WYL.LIB#REG
```

To execute other members of the library, one changes the member name in the above command to whatever is appropriate.

The following is a list of the more frequently used members of $WYL.LIB:

1. **B:** This execfile displays the system backlog at the user's terminal.
2. **DECXFR:** This execfile assists users who wish to transfer a WYLBUR file to UTCS's DECsystem-10.
3. **HELP:** This execfile provides information about WYLBUR command syntax and semantics at the user's terminal.
4. **LIBALLO:** This execfile allows users to create personal WYLBUR Libraries.
5. **LIBEXP:** This execfile allows the user to increase (or decrease) the space reserved for a WYLBUR library.
6. **NEWS:** This execfile provides users with an 'online newspaper' -- helping them to keep up-to-date about current WYLBUR developments.
7. **OUTPUT:** This execfile provides improved handling of printed output from held WYLBUR jobs.
8. **REG:** This execfile allows the user to Register an online dataset or library.
9. **RENAME:** This execfile allows the user to rename (and re-register) an online dataset or library.
10. **RLSE:** This execfile releases unused space in an online dataset or library.

continued...

WYLBUR PUBLIC LIBRARY continued

11. **SCRATCH:** This execfile scratches registered online datasets or libraries.

12. **WYLMN:** This execfile submits a job to print the *OBS/UTCS WYLBUR User's Guide.*

Users of these public execfiles will require documentation to explain how they work. This documentation is provided by another WYLBUR Library called $WYL.EXECDOC. For each supported execfile member in $WYL.LIB there is a corresponding member in $WYL.EXECDOC with the same name as the member in $WYL.LIB. This second member describes how to use the execfile in question. To find out how to use member REG therefore, one would type:

exec from $WYL.EXECDOC #REG

The reader can also use $WYL.EXECDOC to get more information about the Public Execfiles listed above.

UTCS tries to provide Public Execfiles which we feel are useful to you, the user. If you have any suggestions for a facility which you would like to see added to the WYLBUR Public Execfile Library please contact your Computing Services Representative. We would be interested in hearing your suggestions.

John Bradley

SPSS UPDATE

Probably unnoticed by most SPSS (Statistical Package for Social Sciences) users is the recent update of both the standard (H, 500 variables) and maxi (M, 1000 variables) versions of this package to fix all bugs reported to 15 October, 1979. The older releases, 7.2 and 8A, are no longer available. The enhancements since release 6 (as documented in the maroon manual) are documented in the manual *SPSS UPDATE: New Procedures and Facilities for Releases 7 and 8,* which is available at the UTCS Information Office. Some of the highlights are listed below.

Users of the High Speed Job Stream version, SPSSQ, are reminded that SPSSQ is a release 6 version, and some incompatibilities will exist between SPSSQ on HSJS and regular Batch SPSS. In particular, multiple SELECT IFs work differently, and DISCRIMINANT was completely rewritten for release 8. Of course, the new facilities are not available.

Some of the highlights of release 8.0 are:

1. REPORT - a new report generating procedure for formatting and labelling case listings and aggregate statistics.

2. SURVIVAL - life tables, graphs of survival functions, etc.

3. DISCRIMINANT - re-written to implement all the specifications in release 6, plus several added features.

4. SORT CASES - now can be done anytime, and subfiles can be redefined many times in the same job.

5. Extended input and data modification facilities - N OF CASES UNKNOWN with INPUT MEDIUM CARD, date manipulation, etc.

Anyone having questions or problems should contact their Computing Services Representative.

John Roth

PERSONNEL CHANGES

There have been several personnel changes in Computing Services during the past two months. Administrative Computing Services welcomes two new programmers: Helen Consunji who comes to UTCS from Moore Business Forms Ltd. and Kheng-Hua Low who was formerly with the Information Systems Unit of Applied Science and Engineering. The UTCS Systems Group also welcomes two new programmers, Danielle McKenzie and Nancy Smith. The UTCS Administrative Office has several new staff members: Edward Buczynski formerly with Medi-Scope, Theresa Veira who comes to us from Canada Post, and Adriana Marrelli. Rita Chhabra, formerly an Accounting Clerk has now assumed the responsibilities of Accounting Supervisor in the Administration Office. Raeann Chipman formerly with the UTCS Administration Office has been promoted to Computer Operator at Academic Services. Ludlow Williams is also leaving the Administrative Office to join the UTCS Operations Group as a Machine Operator. Other new operators joining the Operations Group include Frank Pearce and Philip Selby who comes to us from Crown Life Insurance. Leslie Fullerton, formerly with the Office of the Ombudsman has joined the programming staff of Academic Services and Mario Ruggiera is now a programmer with the Communications and Small Systems Group. A warm welcome to all!

Theresa Veira

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UTCS SYSTEMS

3033 PROCESSOR

- located in Mclennan Physical Laboratories
- provides General Purpose Job Stream, High Speed Job Stream, TSO, WYLBUR
- 6 megabytes of memory
- MVS with JES2

SYSTEM/370 MODEL 165-II

- located in McLennan Physical Laboratories
- provides APL and ATS services
- 4 megabytes of memory
- OS/MVT with APL and ATS

3031 PROCESSOR

- located in McLennan Physical Laboratories
- provides administrative IMS/VS DB/DC Batch and TSO services
- 6 megabytes of memory
- MVS with JES2

DECSYSTEM-10 Model 1090

- located in Sandford Fleming
- provides General Purpose Time-Sharing
- 256 K - 36 bit words of memory
- TOPS-10 operating system

COMMUNICATIONS & SMALL SYSTEMS (CSS)

- located in SF106
- DEC GT44 System with PDP-11/40 CPU
- 2 Z80 based microcomputers
- DEC GT40 System with PDP-11/05 CPU
- provides specialized graphics and inter- active graphics
- provides on-line and real-time computing services, data acquisition and minicomputer services

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POSITION	ROOM	CENTREX PHONE NUMBER
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Dr. Doron Cohen	MP350	8948
Associate Directors		
Rein Mikkor	MP350	5058
Al Heyworth	MP350	4936
Faculty Liaison Officer		
Dr. Frank Spitzer	MP350	4619
Manager, Communications & Small Systems		
Eugene Siciunas	MP350	4967
Manager, Operations		
Derry Cox	MP350	7092
Manager, Systems		
Ward Beattie	MP350	3579
Manager, Academic Computing Services		
Ralph Lombardi	MP350	7130
Manager, Administrative Computing Services		
Walter Berndl	MP350	7331
Manager, Services Support		
Don Gibson	MP350	5568
Administrative Officer		
Suzan Fawcett	MP350	4428
Information & Accounting Office		
General Inquiries	EA206	4990
Accounts		
Merton Hunte (U of T)	EA206	8702
Sylvia May (External)	EA206	7148
Supervisor, Accounting & Information Services		
Marg Doherty	EA209	3960
Access Codes		
Agatha Stevens	EA206	8703
Programming Services		
Bill Lauriston	SG201	6877

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Vera Cabanus	MP368	5040
Text Entry		
Dale Wright	MP368	4565
Data Entry		
Zelda Anderson	HU405	5273
Keypunching		
Dale Wright	MP368	4565
Supervisor, Applications		
Herb Kugel	SG304	7286
Computing Services Representatives		
Engineering Annex Terminal		
Sue Chong	EA201	4357
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Time-Sharing Support		
TS Advisors	SG204	6465
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Bob Chambers	MP1202	8823
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Ihor Prociuk	SG205	6887,6885
Supervisors, Operations		
Paul Scarborough (IBM 3033-IBM 165)	MP335	6220
Krishna Patnaik (DEC-1090 & CSS)	SF106	4086
Dave Wong (IBM 3031)	MP335	6846

Key:

EA = Engineering Annex
SG = 49 St. George
HU = 215 Huron St.
MP = McLennan Physical Laboratories (New Physics)
SF = Sandford Fleming
SS = Sidney Smith

Job and System Status Queries

SYSTEM/3033,TSO	7373
ATS/APL	6234
2741 TERMINAL MALFUNCTIONS	7107

Time-Sharing Services	**Dial-Up**
APL,ATS	7200 Centrex 7201 Non Centrex
TSO,WYLBUR	6200 Centrex 6201 Non Centrex
DEC-10 Services	4224 Centrex 4244 Non Centrex
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